PARKINSONISM IN CANADA, INCLUDING PARKINSON'S DISEASE

HIGHLIGHTS FROM THE CANADIAN CHRONIC DISEASE SURVEILLANCE SYSTEM

Parkinsonism, including Parkinson's disease, can have significant impacts for those affected, their caregivers, and society. With a growing and aging population, it is estimated that the number of Canadians living with parkinsonism will double between 2011 and 2031 and that the incidence will increase by 50%.[1]

The Public Health Agency of Canada (PHAC), in collaboration with all Canadian provinces and territories, conducts national surveillance of parkinsonism to support the planning and evaluation of related policies, programs, and services. This fact sheet presents an overview of the data on diagnosed parkinsonism, including Parkinson's disease, from the Canadian Chronic Disease Surveillance System (CCDSS, **Box 1**).

WHAT IS PARKINSONISM?

Parkinsonism is an umbrella term that includes Parkinson's disease, secondary parkinsonism and atypical parkinsonism. While the majority of parkinsonism cases are due to Parkinson's disease, cases also arise due to other neurological disorders, medication side effects, or toxins.[2-4]

Parkinsonism refers to a set of signs and symptoms usually characterized by the following motor features:

- rigidity
- tremor
- bradykinesia (abnormal slowness of movement), or
- postural instability.[2-4]

In addition, individuals living with parkinsonism often experience non-motor symptoms such as:

- pain
- mood disorders
- sleep problems
- cognitive impairment or dementia
- constipation
- urinary incontinence
- sexual dysfunctions, and
- reduced sense of smell.[5,6]

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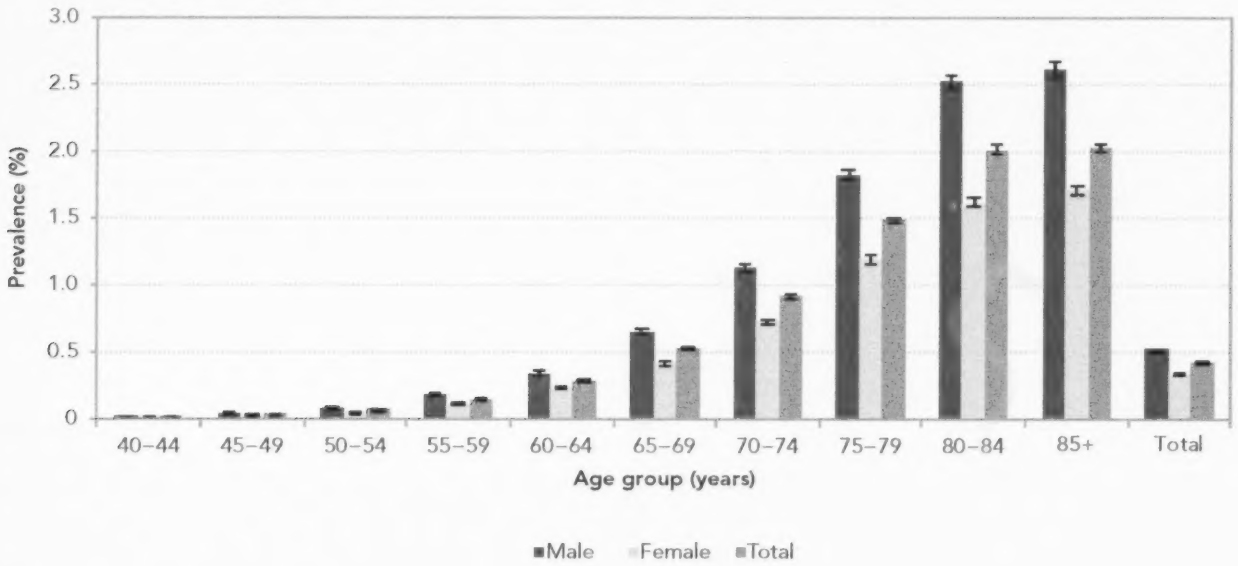
HOW MANY CANADIANS LIVE WITH PARKINSONISM (PREVALENCE) AND HOW MANY ARE NEWLY DIAGNOSED EACH YEAR (INCIDENCE)?

Based on the latest estimates available (**Box 1**), in 2013–2014, approximately 84,000 Canadians aged 40 years and older were living with diagnosed parkinsonism (prevalence: 0.4%) and 10,000 Canadians were newly diagnosed with this condition (incidence: 55.1 per 100,000 population). The age-standardized prevalence was 1.5[i] times higher among males than among females (0.5% vs. 0.3%, respectively), and similarly the age-standardized incidence was 1.7[i] times higher among males than females (annual incidence: 67.8 per 100,000 population vs. 40.3 per 100,000 population, respectively). The epidemiological burden of parkinsonism increases with age. In 2013–2014, when comparing estimates among Canadians aged 85 years and older vs. those aged 40–44 years, the prevalence of the condition was 169[i] times higher in the older age group (2.0% vs. 0.01%, respectively), while the incidence was 48[i] times higher in the older age group (171.5 per 100,000 population vs. 3.6 per 100,000 population, respectively) (**Figure 1** and **Figure 2**).

FIGURE 1: Prevalence (%) of diagnosed parkinsonism, including Parkinson's disease, by sex and age group, Canada, 2013–2014

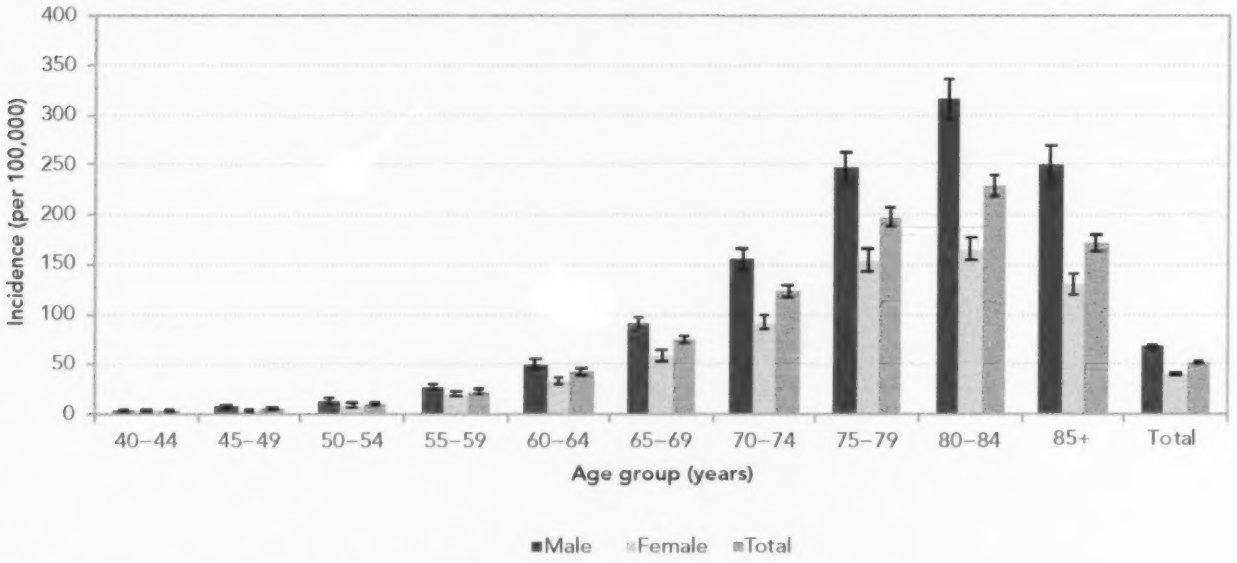


NOTE: The 95% confidence interval shows an estimated range of values which is likely to include the true value 19 times out of 20.

DATA SOURCE: Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, July 2017.

[i] Rate ratios reported in this fact sheet are based on unrounded estimates.

FIGURE 2: Incidence (per 100,000) of diagnosed parkinsonism, including Parkinson's disease, by sex and age group, Canada, 2013–2014



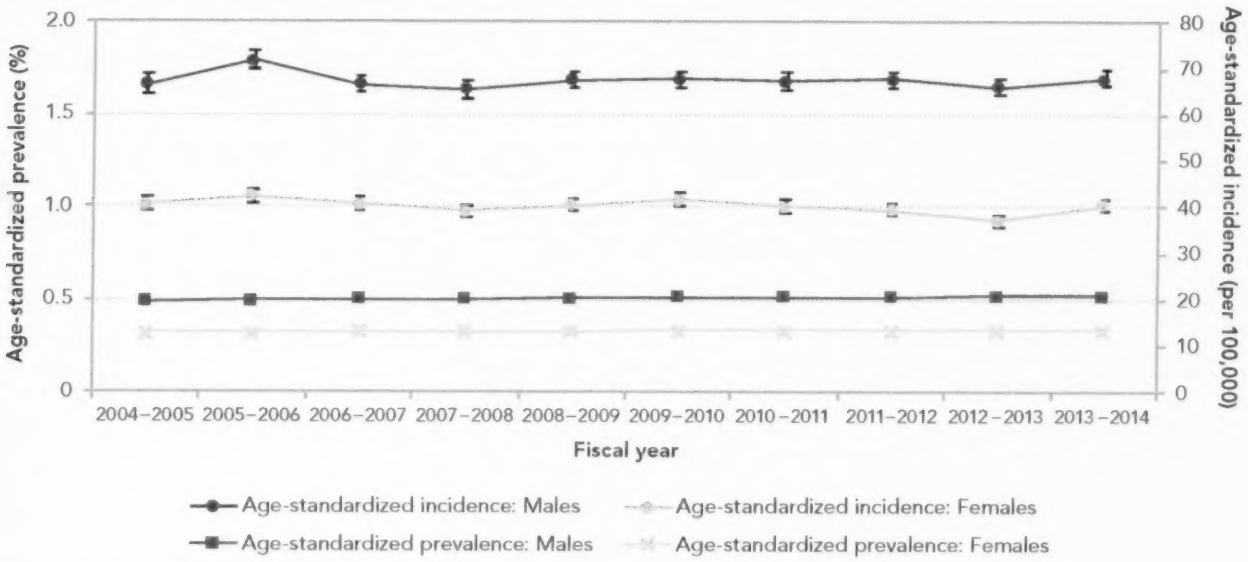
NOTE: The 95% confidence interval shows an estimated range of values which is likely to include the true value 19 times out of 20.

DATA SOURCE: Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, July 2017.

WHAT IS THE TREND OVER TIME IN THE PREVALENCE AND INCIDENCE OF PARKINSONISM IN CANADA?

Between 2004–2005 and 2013–2014, the number of Canadians living with diagnosed parkinsonism increased from approximately 61,000 to 84,000, while the number of Canadians newly diagnosed increased from approximately 8,000 to 10,000. However, during the same period, there was no significant change in the age-standardized prevalence proportion, which remained at 0.4%, or the incidence rate, which went from 51.6 per 100,000 to 52.6 per 100,000. The sex differential also remained constant over time for both indicators (**Figure 3**).

FIGURE 3: Age-standardized prevalence and incidence of diagnosed parkinsonism, including Parkinson's disease, among Canadians aged 40 years and older, by sex, 2004–2005 to 2013–2014



NOTES: Age-standardized estimates to the 2011 Canadian population. The 95% confidence interval shows an estimated range of values which is likely to include the true value 19 times out of 20. The 95% confidence intervals of the prevalence estimates are too small to be illustrated.

DATA SOURCE: Public Health Agency of Canada, using Canadian Chronic Disease Surveillance System data files contributed by provinces and territories, July 2017.

WHAT ARE THE MANAGEMENT OPTIONS FOR CANADIANS LIVING WITH PARKINSONISM?

There is currently no cure for Parkinson's disease and most other parkinsonism cases. However, treatment options are available to help mitigate the symptoms and health impacts associated with these conditions. Most often the primary treatment is pharmacological, but it may also include other therapeutic options and, in the case of Parkinson's disease, surgical interventions. Studies have shown that specially tailored exercise programs, supervised by physiotherapists or other trained professionals, may help affected individuals maintain or improve their physical functionality and general well-being.[2,5]

BOX 1: WHAT'S IN THE DATA?

The data used in this publication are from the Canadian Chronic Disease Surveillance System (CCDSS), a collaborative network of provincial and territorial chronic disease surveillance systems, led by the Public Health Agency of Canada (PHAC). The CCDSS identifies chronic disease cases from provincial and territorial administrative health databases, including physician billing claims and hospital discharge abstract records, linked to provincial and territorial health insurance registry records using a unique personal identifier. Data on all residents eligible for provincial or territorial health insurance (about 97% of the Canadian population) are captured in the health insurance registries.

While CCDSS data reflect the health status of the Canadian population, they may also reflect changes in data collection methods, coding and classification systems, or clinical and billing practices. These factors must also be taken into consideration when interpreting time trends.

Definition of diagnosed parkinsonism, including Parkinson's disease, in the CCDSS

The CCDSS cannot distinguish Parkinson's disease from parkinsonism due to limitations of the health administrative databases. Based on the results from a validation study, the following algorithm was selected.[7] Canadians aged 40 years and older are identified as having diagnosed parkinsonism, including Parkinson's disease, if they have: two or more physician claims within one year, with at least 30 days between claims, with the International Classification of Diseases (ICD-9) code for parkinsonism.

HOW TO LEARN MORE ABOUT PARKINSONISM, INCLUDING PARKINSON'S DISEASE, IN CANADA

VISIT	Canada.ca and **SEARCH** 'parkinsonism' or 'Parkinson's disease'
READ	Mapping Connections – An understanding of neurological conditions in Canada
GET DATA	infobase.phac-aspc.gc.ca/CCDSS-SCSMC
FOLLOW US	@GovCanHealth
LIKE US	@HealthyCdns
MORE	www.parkinson.ca www.michaeljfox.org

ACKNOWLEDGEMENTS

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3 Gonzalez-Usigli HA. Secondary and Atypical Parkinsonism In Merck Manual (Professional Version) [Internet]. Kenilworth (NJ): Merck Sharp & Dohme Corp. 2017 (cited 2017 July 12) Available from: www.merckmanuals.com/en-ca/professional/neurologic-disorders/movement-and-cerebellar-disorders/secondary-and-atypical-parkinsonism.

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